5555 Glenwood Hills Parkway, SE, Post Office Box 874, Grand Rapids, Michigan 49588-0874

8/27/96

August 27, 1996

Leah Evison, RPM
U.S. Environmental Protection Agency
77 West Jackson Blvd. (SR-6J)
Chicago, IL 60604

RE: Albion-Sheridan Township Landfill Oversight Field Report
Remedial Design/Remedial Action (RD/RA)

Dear Leah:

Telephone
616.942.9600
Facsimile
616.942.6499

The field oversight of the remedial design/remedial action was performed by Don Johnson of EARTH TECH between August 7, 1996 and August 14, 1996. Although Mr. Johnson conducted some field oversight during the test pit digging, his primary focus was on the oversight of the monitoring well installation and sampling. As per your request, EARTH TECH did not provide continual oversight; therefore, some of the information in the tables is missing.

Mr. Johnson arrived on-site on August 7, 1996. EDAC Well Drilling Company was already on-site and set up on MW-16DB using a GP-1100 ATV drill rig. The drillers had nearly completed the installation of well MW-16SB the previous day. A total of three rock cores were collected from MW-16SB to assure competent bedrock verification. Upon Mr. Johnson's arrival, Mr. Stockwell (Woodward-Clyde) was off-site attempting to obtain access agreements for wells MW-9DB and MW-15SB.

EDAC used a rotary drilling method which utilizes recirculated water. No bentonite drilling mud was used. EDAC transported County water for the rotary drilling to the site in poly tanks numerous times throughout the day. All drilling water was collected in poly tanks and transported to a central on-site poly tank for later disposal.

After the drillers reached a depth of 64' on MW-16DB, they switched over to a rock core bit in order to collect a rock core sample for bedrock verification. The first core (64-69') was very fractured, so a second core was collected between 69-74'. The second core had some naturally occurring fractures, but also had several "induced" fractures from the drilling and coring procedures. The borehole was drilled out to 77' in order to make room for well installation. The following list provides further information on the installation of wells MW-16SB and MW-16DB.

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Monitoring Well ID	Initiation Date	Completion Date	Depth to Water (Below Grade)	Screen Depth (Below Grade)	Total Depth of Borehole
MW-16SB	8/6/96	8/8/96	21'	31' - 36'	--
MW-16DB	8/7/96	8/8/96	21'	70' - 75'	77'

Late in the day on August 7, 1996, Woodward-Clyde informed Mr. Johnson that monitoring wells MW-9DB and MW-15DB would not be installed until access agreements were made. This determination was not expected to occur for 2-3 weeks.

The wells MW-16SB and MW-16DB were not completely installed at the close of the day. Instead, they were left with a 8 1/4" ID hollow stem auger *in situ* in order to act as a confining barrier of the upper aquifer. The wells were to be tremmie grouted the following morning using portland cement and 3-4% bentonite grout.

On August 12, 1996, Mr. Johnson met with Liz Bartz for a brief meeting. On his way to the site Mr. Johnson picked up #2402 padlocks as requested by Woodward-Clyde personnel. When he arrived on-site, Woodward-Clyde representatives were already there. This was the day groundwater sampling was scheduled to begin. MW-16DB and MW-16SB were being simultaneously developed using 2-2" grundfos pumps at a rate of 4.5 gallons per minute. No pump surging was used during well development nor were any field readings (pH, specific conductivity, and temperature) taken during development. EDAC removed a total of 550 gallons from MW-16SB. The quantity removed from MW-16DB is unknown. Field readings were taken after well development was completed. All development water was contained in a mobile poly tank and transferred into a central on-site poly tank for later disposal.

During a water transfer to the main poly tank, EDAC experienced pump problems and had to go to Jackson, MI to rent another pump. During this time Mr. Johnson observed the beginning of the test pit digging on landfill property.

Late in the day on August 12, 1996, Woodward-Clyde personnel had still not begun well sampling. They experienced trouble locating MW-13SG. After an hour of searching, Mr. Johnson joined Mr. Stockwell (Woodward-Clyde), while Mr. Vora (Woodward-Clyde) began field readings on the newly developed MW-16SB. After over an hour of searching, well MW-13SG was located and flagged. During the search, well MW-11SG was discovered damaged. The well casing (without the screen) and the well procasing had been completely removed from the ground and were found lying next to the railroad tracks. The former well location consisted of a broken cement pad and bentonite seal.

On August 13, 1996, groundwater sampling finally began. When Mr. Johnson arrived, Mr. Vora and Mr. Stockwell (Woodward-Clyde) were attempting to calibrating their meters, but were having problems with their pH standard. Mr. Johnson noted the continuation of the test pit digging at this time. There were 6 or 7 more test pits to be completed on the landfill property.

Woodward-Clyde personnel began to purge MW-1SG using a disposable bailer. They measured pH, specific conductivity, and temperature at one volume intervals until the readings stabilized within 10%. During sampling, the volatile organic samples were filled using a bottom-emptying device. Additionally, the metals sample was field filtered using a 0.45 micron filter. The purge water was collected and transferred to a central on-site poly tank for disposal.

While Woodward-Clyde personnel were gone to check on their expected Federal Express shipment of blank water, Mr. Johnson observed the completion of the test pit digging.

After lunch, the Woodward-Clyde personnel began to purge MW-1WB and MW-1SB. The wells were sampled in the same manner as MW-1SG.

At the next well cluster (MW-2), wells MW-2SG, MW-2WB, MW-2SB were purged and sampled according the previously mentioned method, except the development water was temporarily contained in a 55-gallon drum until it could be transferred to the on-site poly tank. Similarly, wells MW-5SB and MW-5SG were purged and sampled. All purge water was then transferred to the on-site poly tank at the close of the day.

On August 14, 1996, Mr. Johnson met three representatives from Woodward-Clyde at the MW-3 well cluster. A MS/MSD sample was collected at well MW-3SG. Additionally, a field blank was collected on the disposable bailer for MW-3SG using water generated by Edwin Corporation, MD and supplied by Quanterra Environmental Service, OH. Field readings were taken at 1 1/2 volume intervals. Samples were also collected at wells MW-3WB and MW-3SB.

The next well cluster to be sampled was MW-4. A duplicate and a blank were to be collected at MW-4SG; however, Mr. Johnson was not able to remain and oversee the completion of the sampling of these wells. He only observed the collection of the field blank. This was the completion of the EARTH TECH field oversight.

The following information details the specifics of the well sampling.

Monitoring Well ID	Sample Date	Depth to Water (Below Grade)	Total Depth of (Below Grade)	Total Volume Removed (Gal.)
MW-1SG	8/13/96	--	--	--
MW-1WB	8/13/96	--	--	14.0
MW-1SB	8/13/96	--	--	10.5
MW-2SG	8/13/96	--	--	--
MW-2WB	8/13/96	--	--	14.0
MW-2SB	8/13/96	--	--	20.0
MW-3SG*	8/14/96	32.52'	--	7.0
MW-3WB	8/14/96	32.76'	--	15.0
MW-3SB	8/14/96	32.16'	--	20.0
MW-4SG**	8/14/96	32.16'	39.33'	--
MW-4WB	8/14/96	31.87'	63.56'	15.0
MW-4SB	8/14/96	32.19'	75.08'	21.0
MW-4DB	8/14/96	32.04	101.56'	34.0
MW-5SB	8/13/96	--	--	10.0
MW-5SG	8/13/96	--	--	4.5

* Denotes MS/MSD sample taken
** Denotes a Duplicate and Blank taken

In general, the wells were installed and sampled as proposed. Wells MW-9DB and MW-15SB still require access agreements before installation can occur.

Sincerely yours,

EARTH TECH, INC.

Elizabeth U. Bartz
Site Project Manager

cc: Kris Johnson
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